About ten million Americans who suffer from such seemingly disparate symptoms as headaches, neck pain, earaches, tenderness of the jaw muscles, and/or dull, aching facial pain often share a common problem. They all suffer from what has come to be known as temporomandibular joint (TMJ) disorders. These disorders can have a variety of causes and are believed to result when the chewing muscles and jaw joints do not work together correctly. They are more common in young women. In many cases, TMJ disorders can be successfully treated.

**HOW THE CHEWING MUSCLES AND JAW JOINTS WORK**

The structures that make it possible to open and close the mouth are very specialized and work together when you chew, speak, and swallow. These structures include the muscles, ligaments, bones, and joints of the jaw.

Five pairs of muscles allow you to open and close your mouth. They also control forward, backward, and side-to-side movements of the lower jaw. Also involved in these movements are the temporomandibular joints. Each of these important joints has two sections, connected by a disk, that make possible the hinge and gliding actions needed to open the mouth widely (Fig. 1).

Any problem that prevents this complex system of muscles, ligaments, bones, and joints from working together properly may result in a TMJ disorder.

**SIGNS AND SYMPTOMS OF TMJ DISORDERS**

TMJ disorders have many signs and symptoms. Some of the most common include the following:

- Pain in or around the ear. This pain often spreads to the face.
- Tenderness of the jaw muscles.
- Clicking/popping noises when one opens or closes the mouth.
- Difficulty in opening one’s mouth.
- Jaws that get stuck, lock, or go out.
- Pain brought on by yawning, chewing, or opening the mouth widely.
- Certain types of headaches or neck aches.

Your dentist can determine the cause of your symptoms by doing a complete medical history, a clinical examination, imaging studies, and/or casts of your teeth. Your dentist may refer you to a physician or to another dentist.

**CAUSES OF TMJ DISORDERS**

TMJ disorders often result when the chewing muscles and the temporomandibular joint do not work together correctly. When this occurs, the muscles often cramp. This spasm can then become part of a cycle that results in tissue damage, pain, and muscle tenderness.

Although trauma such as blows to the jaw or face, and diseases such as osteoarthritis and rheumatoid arthritis may cause TMJ disorders, factors relating to the teeth and bite are common causes of TMJ disorders. Among these factors are the following:

- Oral habits such as clenching the teeth or grinding the teeth. Clenching is continually biting on things, such as ice, gum, pencils, or fingernails, while awake. It is often due to stress. Grinding (bruxism) usually occurs during sleep. These habits can tire the muscles and cause them to go into spasm. The spasm causes pain, which in turn causes more spasm. The end result of this spasm-pain-spasm cycle may eventually be a TMJ disorder. Many people unconsciously "clench" their teeth during the day, often in response to unperceived environmental stressors.
• Problems in the way the teeth fit together or bite. Improperly aligned teeth can sometimes place the chewing muscles under stress and cause them to go into spasm, thus setting off the harmful cycle described above.

• Oral habits and problems with the bite often work together to cause TMJ disorders.

TREATMENT FOR TMJ DISORDERS

Since the teeth, chewing muscles, and temporomandibular joints all can be involved in a TMJ disorder, treatments vary. Your dentist will decide what type of treatment is needed for your particular problem. Often, treatment will involve a series of phases. This step-by-step plan is in your best interest because only minor corrective treatment may be needed.

If pain and other symptoms persist, a more involved treatment, such as changing the way your teeth fit together, or even surgery, may be needed. However, surgery is recommended only when a precise cause of the disorder has been pinpointed and usually should not be undertaken until more conservative treatments of the disorder have been tried first.

Some common methods of treating TMJ disorders are listed below:

• Elimination of Spasms and Pain - This can be done by applying moist heat to the face, using prescribed muscle relaxants or other medications, massaging the muscles, and eating soft, non-chewy foods. These are especially helpful for acutely painful flares. Bite plates or occlusal (bite) splints can also be made. This treatment helps to eliminate the harmful effects of clenching or grinding the teeth. Bite guards/splints are more helpful over time to prevent acute flares.

• Counseling or Biofeedback/Relaxation Training - Many times counseling is used along with other forms of treatment. If emotional stress is the factor that causes clenching or grinding of the teeth, that stress should be reduced or eliminated. Biofeedback, a relaxation technique that teaches people to control tension throughout various parts of the body with the aid of an electronic monitoring device, can also be helpful in reducing muscle tension in the jaw. Such mind/body techniques as the Alexander Method can be helpful in muscle re-education.

• Correcting the Way the Teeth Fit Together - If your bite is incorrect or uneven, it can be adjusted by selective grinding of the teeth. Orthodontic appliances (braces) and other dental procedures may also be used to reduce problems caused by improperly aligned teeth.

• Surgery - If muscle spasms have occurred for long periods, the TMJ itself may become injured or arthritic. In addition the bones and soft tissues of the TMJ may slip out of normal position because of trauma such as a blow to the head, or some other cause. Occasionally, in cases such as these, surgery may be needed to correct the TMJ problem.

Your dentist and other health professionals who provide treatment for TMJ disorders care about your health and comfort. Follow the recommendations they give you and discuss with them any concerns you may have. Remember, in many cases the pain, headaches, and other symptoms associated with TMJ disorders can be successfully treated.

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